National Institute of Environmental Health Sciences

Vectors and vector-borne diseases in Turkey

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Abstract:

In Turkey, arthropod-borne diseases such as human babesiosis, dirofilariasis, leishmaniasis, malaria, lymphatic filariasis, onchocerciasis, anthrax, bartonellosis, louse-borne relapsing fever, lyme disease, plague, trench fever, tularemia, epidemic typhus, tick-borne typhus, Crimean-Congo hemorrhagic fever, phlebovirus infections, tick-borne encephalitis and west nile virus in humans; animal trypanosomiasis, avian haemosporidiasis, babesiosis, canine hepatozoonosis, canine lesihmaniosis, dipetalonemiasis, dirofilariosis, habronemiasis, onchocerciasis, parafilariasis, setariasis, theileriosis, thelaziasis, anaplasmosis, ehrlichiosis, feline infectious anemia, akabane, bluetongue, bovine ephemeral fever, equine infectious anemia, louping ill, west nile virus, colony collapse disorders (CCD) were reported in domestic animals and Wolbachia endobacteria infection was also reported in mosquitos so far. On the other hand, aphids (Aphididae), leafhoppers (Cicadellidae), white flies (Aleyrodidae), beetles (Coleoptera), trips (Thysanoptera), gal mites (Eriophyidae), and nematodes are also very important vectors of plant diseases in Turkey. Some of the most harmful plant viruses in the world such as tristeza, plum pox virus, and tomato ringspot viruses are also transmitted by arthropod vectors. In recent years, in spite of changes in ecological balance caused by abandoning agricultural land, use of natural areas to farm, release of rabbits, preventing water flooding, leaving the fields uncultivated, migration from urban to rural areas, hunting of wild animals, the dramatic drop in the number of farm animals, global warming and the strengthening of wild life was probably responsible for the increase of tick populations. The construction of ponds and dams, changes in riverbeds, drying out of swamps and marshes, dense ad-hoc and haphazard construction, changes in picnicking habits, wild irrigation in agriculture, and the use of unsuitable control measures by local authorities, resulted in an increase of flies. This led to an increase in infected vector populations and vector-borne diseases and a decrease in the potential for economic development. In conclusion, it is very important to initiate and develop integrated control programs targeting arthropod vectors, disease agents of human, animal and plants and natural reservoirs. These diseases have been caused high economic losses in Turkey, and therefore they should be further investigated.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Food/Water Security, Human Conflict/Displacement, Temperature

Extreme Weather Event: Drought, Flooding

Food/Water Security: Livestock Productivity

Temperature: Fluctuations

Geographic Feature: ☑

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Asia, Europe

Asian Region/Country: Other Asian Country

Other Asian Country: Turkey

European Region/Country: European Country

Other European Country : Turkey

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Infectious Disease, Other Health Impact

Infectious Disease: Vectorborne Disease, Zoonotic Disease

Vectorborne Disease: Flea-borne Disease, Fly-borne Disease, Mosquito-borne Disease, Tick-borne Disease

Flea-borne Disease: Other Flea-borne Disease

Flea-borne Disease (other): Bartonellosis; Trench fever

Fly-borne Disease: Leishmaniasis, Trypanosomiasis, Other Fly-borne Disease

Fly-borne Disease (other): Phlebovirus

Mosquito-borne Disease: Malaria, West Nile Virus, Other Mosquito-borne Disease

Mosquito-borne Disease (other): Elephantiasis; Endobacteria; Wilbachia Endobacteria

Tick-borne Disease: Anaplasmosis, Babesiosis, Crimean-Congo Haemorrhagic Fever, Ehrlichiosis, Lyme Disease, Relapsing Fever, Tick-borne Encephalitis, Other Tick-borne Disease

Tick-borne Disease (other): Typhus; Theileriosis

Zoonotic Disease: Anthrax, Tularemia

Other Health Impact: Feline Infectious Anemia

Resource Type: ☑

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified